



Council of Energy Resource Tribes

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Authorized by: SL

Date: 6/12/13

November 13, 1984

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Mr. Vicente Pedro, Sr., Governor
Pueblo of Laguna
P.O. Box 194
Laguna, NM 27026

Dear Governor Pedro:

We reviewed the document, "Preliminary Draft Jackpile-Paguate Uranium Mine Reclamation Project Environmental Impact Statement, 1984". Please find enclosed a copy of our comments on the subject PDEIS.

The PDEIS in principle has fulfilled the requirements of the National Environmental Policy Act by addressing the issues gathered during the scoping process. Additionally, the Pueblo's concerns regarding the problems of Mesita Reservoir siltation and damaged Paguate homes were mentioned in the document.

The CERT staff felt more data and discussion should be presented to support the assumptions and conclusions made. However, we also understand that to do so will make the EIS voluminous. Our comments denote the specific areas of concern.

Sincerely,

John Blueyes
Senior Environmental Engineer

Enclosure



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**COMMENTS ON THE PRELIMINARY ENVIRONMENTAL
IMPACT STATEMENT FOR JACKPILE-PAGUATE
URANIUM MINE RECLAMATION PROJECT**

NOVEMBER 13, 1984

**COUNCIL OF ENERGY RESOURCE TRIBES
1580 LOGAN STREET
DENVER, COLORADO 80203
(303) 832-6600**

JACKPILE - PAGUATE PDEIS COMMENT RECORD

Council of Energy Resource Tribes
Reviewer

11-13-84
Date

COMMENT INVOLVES:

- POLICY - Comments related to the manner in which BLM usually manages an EIS. Can also pertain to standard procedures, legal requirements, BLM Manual and other guidance currently in effect.
- TECHNICAL ADEQUACY - Comments related to the adequacy of impact analysis, accuracy of numerical calculation, interpretation of resource data and conclusions. These comments can also address the feasibility of opportunities and/or alternatives.
- EDITORIAL - Comments addressing discrepancies in the document style, structure and format. Questions concerning grammar, sentence structure and spelling can also be noted here.
- X SUGGESTIONS - Comments noted as suggestions will be incorporated into the document at the discretion of the team leader/technical coordinator.
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<u>PAGE</u>	<u>PARAGRAPH</u>	<u>COMMENT</u>
1-21	2	Options A and B under "Controlled Use Alternatives" are not clear and need more explanation. Both of these options are not well defined anywhere in the text including Table 1-1 on page 1-23.
1-29	Table 1-2	Maps and cross-sections should be provided showing final contours for each alternative. These would provide a pictorial aid in reviewing this table.
2-15	Table MO-7	A list of parameters being monitored for both surface and ground water should be provided.
2-19	3	Has the lowering of the water table been monitored in the village?
2-40 thru 2-51	-	This part contains an introductory discussion of electromagnetic radiation, principally, ionizing radiation, that should more appropriately be presented in an appendix to the EIS.
3-66	All	In order to fully address the air quality impact of the reclamation project, some reference to total suspended particulates (TSP) emissions during reclamation activities should be made. Also, it is recommended that TSP monitoring on the pueblo be performed according to federal reference procedures parallel to the monitoring frequency used by the state of New Mexico.
2-79	Table R-14	The locations of the wells sampled should be provided.

<u>PAGE</u>	<u>PARAGRAPH</u>	<u>COMMENT</u>
2-83	1	A regional drainage basin map would be helpful for describing the surface water drainage system.
2-83	1	Additional detail should be provided on the nature of the alluvium and creek bed characteristics.
2-83	3	How erosion resistant was the waste material dumped in the original channel and was it compacted?
2-84	2	Hydrographs should be provided showing seasonal fluctuations of the flow.
2-84	2	What methods and assumptions were used to estimate peak flows at the southern boundary of the property? Were these analyses performed by the USGS (if not referenced)?
2-85	2	Where were the rivers sampled?
2-85	3	The regional significance of the major aquifer should be defined.
2-85	3	What caused the spring on the Rio Pagate side of the North Pagate Pit? Does the spring correspond with a fracture system, a fault or what? Where does the water come from?
2-87	1	The range in specific conductivity for annual increases is quite large (300 to 2000 umhos/cm). Are these numbers dependent on the pond locations or seasonal variations?
2-88	2	Is the summary of water quality analyses easy to obtain by the people most likely to review this EIS? Is a summary (i.e. means, variances, and range) for each parameter sampled at each site too large to put in an appendix?
2-96	3	It would be helpful if a summary of the ground water quality was presented in the appendix.
2-132 thru 2-136	-	Potential sociological and health impacts need to be discussed or referenced to in the other parts of the document. Analysis of potential effects of each alternative or any future uranium development should be done.
3-48	2	A discussion on monitoring methodology and period should be provided.

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<u>PAGE</u>	<u>PARAGRAPH</u>	<u>COMMENT</u>
1-13	6	Change the word "particulates" to "solids."
1-26	Table 1-1	Drill holes should be backfilled in accordance to regulations for exploration drilling on federal lands.
2-15	Table MO-7	The table references the monitoring frequency of particulate (non-radiological) as monthly. This is not consistent with federal requirements which require TSP to be measured at least once every six days.
2-54	1	This paragraph on radiation standards should emphasize that radiation standards are promulgated to minimize the potential health effects of nuclear radiation, primarily on the human population, from <u>any</u> anthropogenic activities which, of course, would include reclamation after uranium mining operations.
2-84	1	Define "other times"

<u>PAGE</u>	<u>PARAGRAPH</u>	<u>COMMENT</u>
2-84	1	Is the Rio Paguate below the mine site intermittant? Where is the water lost?
2-89	Table H-1.	Are the water quality parameters listed in this table for one sampling or the average of several? If this table represents only one sampling at each site, when were the samples taken?
2-91	Table H-2	Define "mostly above the water table" for the colluvium.
2-91	Table H-2	In an earlier section of the EIS the Jackpot Sandstone was called the uppermost unit of the Brushy Basin Member. This should be consistent.
2-92	1	What is the major anion for the alluvial water and how does the alluvial ground water compare to the ground water found in the bedrock?
2-92	2	A potentiometric map showing flow direction of the ground water would aid a reviewer.
2-93	2	This paragraph is somewhat confusing and needs to be clarified. During what season was the stream survey taken to determine the losing and gaining segments? Is the 20 gpm an average over a long period of time or based on one flow sampling? Twenty gpm is not a lot of water, one would not expect any significant mounding from this. If this conclusion is based on only one flow survey, it can be attributed to several causes including human error.
2-93	3	Clarify "Pit backfill above the water table may become partly saturated under large depressions after major storms."
2-94	1	How were base flow and under flow in the alluvium determined? Was the rate of recharge of 0.1 in./yr in used in the model for determining post-reclamation water levels? If so, this number would lead to a conservative estimation of the time required for the ground water level to reach equilibrium.
2-94	2	Are there any reasons for the wide range of hydraulic conductivities in the backfill? Were there differences in the materials that make up the backfill (i.e. grain size distribution)? Which values were used to predict post-reclamation water levels?
2-94	2	Careful attention should be paid to the use of the word "permeability" when taking about hydraulic conductivity.

<u>PAGE</u>	<u>PARAGRAPH</u>	<u>COMMENT</u>
2-95	1	Is the value for hydraulic conductivity of 190 ft/d based on one test or several? Earlier in the text and in this paragraph, it was stated that the waste rock is unlikely to become saturated. If so, how was hydraulic conductivity determined?
2-97	-	Page 2-97 should be page 2-98 and visa versa.
2-98	Table H-3	Is this table based on one sample from each well or average of several samplings?
2-102	2	Define "a stable stream bed."
2-108/109	All	Baseline meteorological data is very brief and limited. Some information on wind direction would be helpful for the residents of Paguete.
2-110	1	The statement that stability would be less at the mine site than at Albuquerque is not substantiated with data. There exist other considerations than terrain for atmospheric stability. Making a conclusion on dispersion at the mine site based solely on the relative terrain differences between Albuquerque and the mine site is inappropriate.
2-110	3	The sampling frequency mentioned does not conform to accepted federal requirements for TSP monitoring. As previously mentioned, data must be collected at least once every six days.
2-111	1-2	The state of New Mexico standards do not apply on the Laguna Reservation. Only federal standards apply.
2-111	2	Related to the above comment it is not appropriate to compare the TSP values at the mine site and the federal standards because of the disparity of monitoring frequency of the site stations and those required by federal guidelines. Likewise, the monitoring data collected at the sites are not directly comparable with data collected by the state of New Mexico at Paguete (Table A-1). Also, the state monitors TSP levels in one 24-hour sample every six days (not weekly).
2-132	General	<p>There is no discussion of population, particularly in the village of Paguete. A breakdown by age and sex and some indication of the number of Paguete residents who previously worked at the mine would help in determining the following:</p> <ul style="list-style-type: none"> ● Those who might directly benefit financially from the reclamation project. ● Population groups potentially sensitive to activities at the mine site (elderly, children, women in child-bearing age).

<u>PAGE</u>	<u>PARAGRAPH</u>	<u>COMMENT</u>
2-132	General	<p>A description is needed for the following:</p> <ul style="list-style-type: none"> ● Housing baseline conditions. ● Baseline condition of service infrastructure which could potentially be impacted (roads, water systems, etc.).
3-1	All	TSP emissions which could result from blasting need to be addressed.
3-20	1	Dump FD-2 will probably experience failure (page 3-17, paragraph 5), however the statement here expresses the dump will probably be stable over the longterm. Please clarify.
3-27	1	Basic assumptions for the model should be given including data input.
3-27	1	What type of model was used to determine the movement of the radioactive plume?
3-28	1	Why would surface soil and vegetation covers placed over the waste dump tend to increase the ground water levels in the area? In earlier statements, it was said that the waste dumps would not become saturated. Ground water loss through evaporation is not a very good reason especially if the water levels are toward the bottom of the dumps.
3-46	1	"Ground water recharge level" is poor terminology.
3-46	2	How was the estimation of three to four tons of salt made?
3-47	1	What numbers were used for the hydraulic conductivity of the backfill?
3-47	2	More specific information on the USGS generic model is required (was it finite difference or analytical?).
3-48	1	To what extent in terms of magnitude were the parameters for recharge and hydraulic conductivity varied? What was the justification for these variations?
3-48	3	The drainage plan for "Controlled Use Alternative, Option B" is not clear.

<u>PAGE</u>	<u>PARAGRAPH</u>	<u>COMMENT</u>
3-49	1	What would be the permeability of the material used for the cut-off? Cross-sections would be helpful.
3-50	1	Will the backfill be placed to inhibit or provide for infiltration?
3-50	1	What grading technique is suggested for this alternative?
3-51	2	TDS and dissolved heavy metal concentrations are more the function of detention time in relationship to the sediment rather than the amount of sediment deposited.
3-51	2	Insert the words "contour furrowing" after "Mulching" in sentence two. Additionally, replace the word "retention" with "infiltration" to provide clarity. Retention implies ponding of water.
3-52	1	Have column leach studies been performed to show these statements quantitatively?
3-52	2	The fourth sentence should be reworded to "Until the backfill becomes saturated and the ground water reaches a reducing state, water seeping through the fill has the potential to leach toxic elements from the fill material."
3-53	2	The first sentence is unclear. In this option, is the ground water under an artesian head? If the potentiometric surface is above the surface and the ground water is unconfined you would have a lake.
3-54	2	A post-reclamation potentiometric map would be helpful.
3-55	1	Earlier it was said additional backfill would increase the water levels which would effect the ground water flow. Why won't this happen under this option? Would more backfill decrease the recharge rate which would during the first 100 years affect the ground water flow?
3-56	1	Maps showing locations would be helpful.
3-58	1	What material is proposed to be used to construct the artificial watershed divide? If not constructed properly, the divide could be breached by headcutting.

<u>PAGE</u>	<u>PARAGRAPH</u>	<u>COMMENT</u>
3-61	1	Many studies have been performed on abandoned coal mine lands showing that unprotected spoil piles erode quickly during the first few months of abandonment and then become somewhat stabilized. New disturbance has a tendency to increase sediment yield from the sites. This will probably occur during the Jackpile-Paguate Mine reclamation and should be accounted for by having enough sediment storage in the Paguate Reservoir.
2-61	1	The results of the ground-based radiation surveys should also be discussed in this section in addition to the aerial surveys. Additionally, a discussion of data correlation for both aerial and ground-based surveys would be appropriate, e.g. in Table R-5.
3-62	3	Delete the words "Sheet, gully, and" from sentence one.
3-63	Table H-1	In footnote "a" the number "1" should read "1.5."
3-64	2	Anaconda stated the rocklined chutes will also serve as an access route to the top of dumps for livestock. However, trails created by livestock would channel runoff water downslope and cause gully erosion.
3-66	All	The conclusions of this section are generally true. However, TSP emissions produced during reclamation should be addressed.
2-65 and 2-66		Gamma exposure rates to the sediments of the Paguate Reservoir as expected are quite variable as a function of depth from the surface of the sediment. However, no mention is made in this section of a monitoring program to trace the dynamic trends of radiation deposition in the Paguate Reservoir sediments during the course of the reclamation and during the post reclamation period.
3-70	1	A table or tables of seed mixture(s) showing plant species and seeding rates would enhance discussion in this part. Also, Anaconda has agreed to transplant from 500 to 1,000 pinion and juniper seedlings in the reclaimed area. This should be noted.
3-78	3	There is no discussion or data related to the possible economic benefit to the Pueblo or individuals from post-reclamation uses of the land.
3-78	3	A comparison of alternative reclamation proposals and the no action alternative is needed as they affect the financial feasibility of future mining or other uranium recovery efforts.

<u>RGE</u>	<u>PARAGRAPH</u>	<u>COMMENT</u>
3-78 3-79	3 Table ES-1	Data on reclamation jobs and income for each reclamation proposal are needed.
3-78	General	A discussion of the potential health-related (short term and long term) impacts and a discussion of the impacts from blasting, truck traffic, etc. are needed.